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L6: Entry 1 of 4

File: USPT

Aug 13, 2002

DOCUMENT-IDENTIFIER: US 6432280 B1

TITLE: Pollution control device

Detailed Description Text (12):

The pollution control device of the present invention includes an output cooling unit 20 in gaseous communication with an output of the output non-thermal plasma reactor 18. The cooling unit 20 may utilize a refrigerant such as ammonia (R-717), carbon dioxide (R-744), propane (R-290), ethane (R-170), methane (R-50), ethylene (R-1150), propylene (R-1270), glycol, or liquid nitrogen. The output cooling unit 20 cools the effluent gas to a non-excited state prior to either releasing the processed effluent gas into the environment through output 40a or re-injecting the effluent gas through piping 40b into the source 12, such as an engine, boiler, incinerator, or other effluent gas source. By cooling the effluent gas at this output stage, re-association of oxides in the effluent gas is substantially prevented by reducing the radical nature of the dissociated components. The stabilized state of the effluent gas, it is believed, allows the components to associate as near perfect elements, such as N.sub.2 and O.sub.2, rather than re-associating into harmful pollutants like NO, NO.sub.2, SO.sub.2 and CO.sub.2.

A { R-290 propane  
R 170 ethane  
R 50 methane  
R 1270 propylene

-R 600 butane  
-R 600a isobutane  
R 601 - n-pentane

propane/isobutane